United States Environmental Protection Agency

Office of Research and Development

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Press Release

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EPA Study Suggests Possible Association Between Birth Malformations and Agricultural Herbicide

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Research Triangle Park, NC...A U.S. Environmental Protection Agency study by Dr. Dina Schreinemachers published in the July issue of *Environmental Health Perspectives* suggests an association between rates of birth malformations and indirect measures of human exposure to chlorophenoxy herbicides, a common weed killer sold commercially and used in agriculture. The results are somewhat consistent with those obtained in a 1996 Minnesota birth malformation study by Dr.Vincent Garry of the University of Minnesota, for which Dr. Schreinemachers was a co-author. However, the earlier study also implicated fungicides as a possible cause of the association and a number of other confounders which could not be ruled out as possible explanations.

The investigator compared 43,500 birth outcomes compiled by the National Center for Health Statistics in selected counties of Minnesota, North Dakota, South Dakota and Montana with high-wheat and low-wheat acreage in those states. She found that in high-wheat counties, combined circulatory and respiratory malformations increased by more than two-fold, and musculoskeletal malformations increased by 50 % relative to low-wheat counties. Death rates from birth malformations among male infants in high-wheat counties were more than twice the rates in low-wheat counties.

Since this study used wheat acreage rather than actual measurements of human exposure to determine associations with birth malformations, it is not known whether birth malformations occurred among families with actual exposure to the herbicides in question in the selected counties. Such epidemiologic studies are used to generate hypotheses. Then they must be followed up with studies that measure exposure in individuals rather than just on a county basis to determine whether the suggested relationship still holds. Although individual exposures cannot be determined from this research, the results may be indicative of potential hazards in connection with environmental exposures to chlorophenoxy herbicides.

Chlorophenoxy herbicides are widely used in the U.S. for the control of broad-leaf weeds not only in wheat farming, but also for maintenance of parks, home lawns, roadsides, and utilities rights of way. The EPA sets standards for levels of 2,4-D for drinking water under the Clean Drinking Water Act of 1974. This new research provides data that can be useful for future research efforts such as the Agricultural Health Study jointly funded by the National Cancer

Institute, National Institute of Environmental Health Sciences and EPA. This latter study, initiated in 1994, prospectively tracks the experience of some 90,000 pesticide applicators and their spouses in North Carolina and Iowa. Studies are planned as part of this overall effort to look for possible health effects of pesticides. Potential health effects from low-dose, environmental exposures to herbicides are of concern to the Agency.

Editor's note: A full copy of the report is available from *Environmental Health Perspectives* by fax or e-mail (PDF format) to media at no charge. Go to www.ehponline.org/press or call 919-653-2583.

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